

DELTA PROTECTION COMMISSION

14215 RIVER ROAD

P.O. BOX 530

WALNUT GROVE, CA 95690

Phone (916) 776-2290

FAX (916) 776-2293

E-Mail: dpc@citilink.net Home Page: www.delta.ca.gov

**AGENDA ITEM #9**

July 10, 1999

To: Delta Protection Commission

From: Lori Clamurro, Delta Protection Commission Staff

Re: April '99 Round of CALFED Category III Ecosystem Restoration Grants (recommended)

As part of early implementation of its Ecosystem Restoration Program, CALFED has been funding proposals for various studies and projects which would benefit endangered species and their habitats. The projects are funded from bond monies approved in Proposition 204 in November 1996 as well as federal Bay-Delta Act appropriations. The most recent solicitation for proposals occurred in April 1999; this memo gives a brief description of the studies and projects in the Delta which have been recommended for funding by CALFED's Technical Review Panels and Integration Panel. These recommendations will eventually be passed on to Secretary of Interior Bruce Babbitt and Secretary of Resources Mary Nichols for approval; it is expected that final approval will be mid- to late August 1999.

For federal FY 99, approximately \$73 million in federal Bay-Delta Act appropriations is available for various projects. In February 1999, CALFED announced that approximately \$55 million of this amount was being allocated to various Designated Actions, recommended by the Integration Panel and reviewed and approved by the Ecosystem Round Table and Policy Group. This left approximately \$18 million available for distribution through the proposal solicitation process. Of this amount, \$9,897,037 has been recommended to fund twelve projects located in the Delta. In addition, one Flood Control Bypass Habitat Directed Program and seven Nonnative Invasive Species Directed Programs were selected by CALFED as Designated Actions to be funded with \$1,704,691 in unallocated FY 98 funds.

PROPOSALS RECOMMENDED FOR FUNDING:

Fish Treadmill Project -- Develop Fish Screen Criteria for Native Sacramento-San Joaquin Watershed Fishes. This is an ongoing research effort (previously funded exclusively by the Department of Water Resources) to quantitatively evaluate the performance and behavior of small Delta and upstream fishes in multi-vector flows near fish screens, in order to develop fish screen design, flow, and operational criteria that reduce adverse impacts of water diversions on these species. The proponent, U.C. Davis Hydraulics Laboratory, has requested \$1,036,821 to continue this project for a period of 13.5 months (August 1999 - September 2000) in order to complete ongoing experiments with Delta smelt, splittail, and chinook salmon, as well as conduct experiments with steelhead trout and other priority species.

East Delta Habitat Corridor (Georgianna Slough). This tidal marsh and riparian restoration project builds upon work which has already been accomplished under an existing CALFED contract for Georgianna Slough. The proponent, Jeffrey Hart, has requested \$1,100,000 to substantially improve habitat conditions along 14 miles of Georgianna Slough by: enhancing seven miles of existing berms; restoring and enhancing three miles of tidal freshwater marsh; removing exotic vegetation from the berm and embankment and replacing it with native species; continuing the use of new bioengineering techniques for 3,000 linear feet of new areas on the Tyler Island side of the slough (Reclamation District 563) and 5,000 linear feet on the Andrus Island side of the slough (Reclamation District 556); and expanding the monitoring program initiated on Tyler Island under the earlier CALFED grant to the new sites.

Understanding Tidal Marsh Processes and Patterns. This project builds upon earlier Category III-funded research on predicting the ecological benefit of restoring shallow-water tidal habitat in natural and historically diked wetlands in the Delta. The applicant, University of Washington School of Fisheries' Wetland Ecosystem Team, is requesting \$1,042,246 to refine and extend the conceptual model developed in the previously-funded Category III grant to Suisun Bay and San Pablo/North Bay, assess the relationship of fish and macroinvertebrates to restoration status, and evaluate food web and other ecosystem linkages in these areas. The work products from this three-year study would provide critical information necessary to predict whether breached-dike restoration strategies would provide natural wetland functions to support shallow-water aquatic habitat and rehabilitate the Bay-Delta food web.

Linked Hydrogeomorphic Ecosystem Models to Support Adaptive Management, Cosumnes-Mokelumne Paired Basin Studies. This project develops a demonstration monitoring and assessment program for the Cosumnes and Mokelumne Rivers. The proponent, U.C. Davis Center for Integrated Watershed Science and Management, would receive \$1,546,016 for the three-year study, which would support five core programs: hydrology, geomorphology, water quality, aquatic resources, and data analysis and dissemination. The baseline information obtained from this project would be used to test and validate predictive models which will guide the design and implementation of a long-term monitoring program dedicated to CALFED's adaptive management goals.

Chronic Toxicity of Environmental Contaminants in Sacramento Splittail: A Biomarker Approach. This proposal would measure four biological indicators (contaminant exposure, general condition indices, organ and reproductive dysfunction, and individual-level response) to evaluate the chronic effects of contaminants (mercury, selenium, diazinon, polychlorinated biphenyl, and organochlorine pesticides) on the health of splittail under laboratory and field conditions. The study would provide valuable information for future environmental compliance and regulatory studies and the ecological risk assessment process. The applicant, U.C. Davis Department of Animal Science, would receive \$673,684 for this three-year study.

Assessment of Pesticide Effects on Fish and Their Food Resources in the Sacramento-San Joaquin Delta. This proposal is an integrated laboratory and field study with the objective of providing information on pesticide toxicity to resident species, developing the data needed to apply laboratory-derived toxicity measures to realistic field conditions, and putting results in an ecological context focusing on juvenile chinook salmon and their prey. The applicant, U.C. Berkeley, is requesting \$1,875,561 for this three-year study.

Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River. This project will produce a management action plan to eliminate the oxygen depletion in the lower San Joaquin River near Stockton during the fall. The management plan would be the result of developing a database containing new and historical data on the source loads of oxygen depleting substances, collecting additional field data on source loads and controlling mechanisms, filling data gaps in existing models, and evaluation of management alternatives. The proponent, the Department of Water Resources, is requesting \$866,408 for this three-year study.

Dissolved Organic Carbon Release from Delta Wetlands, Part I. This study proposes to characterize the concentration of dissolved organic carbon released from different wetland types within the Delta and by agricultural activity, assessing both incorporation into Delta foodwebs and public health concerns that arise when Delta waters are used as drinking water. The applicant, U.S. Geological Survey, is requesting \$1,392,669 for this study.

An Evaluation of the Potential Impacts of the Chinese Mitten Crab on the Benthic Community in the Delta. While the impacts of the Chinese mitten crab on Delta fish facilities is well documented, it is not clear how the downstream migration of adult crabs in the late summer/early fall impacts the food webs of the Delta and northern estuary. Food web disruption has severe effects on native fish and their food supplies. This proposal would obtain an evaluation of these food web impacts; it would build on the base of ongoing monitoring and assessment activities. The applicant, Department of Water Resources, is requesting \$147,799 for this study.

Purple Loosestrife Prevention, Detection, and Control Action for the Sacramento/San Joaquin River Delta System. Purple loosestrife is a nonnative perennial plant that poses an aggressive threat to almost all the wetland and riparian habitats in the CALFED geographic area, particularly in the Delta where there are threatened and declining species. It is showing up in California in a number of small, but growing, infestations. The applicant, Department of Food and Agriculture, is proposing to conduct an exhaustive survey of the Delta, eradicate loosestrife in the Delta and other hydrological units, train agency personnel working in and near the Delta to recognize loosestrife and other nonnative invasive species, and educate the public, particularly boaters and waterfowl hunters. Part of this project (\$201,306) is being funded as a Nonnative Invasive Species Directed Action (see below); the remaining \$127,473 would be awarded under this grant. This is a three-year project.

Health Monitoring of Hatchery and Natural Fall-Run Chinook in the San Joaquin River.

To date, no comprehensive fish pathogen study has been conducted on San Joaquin River chinook salmon to ascertain the effect of fish disease on this population. This project would characterize the health and physiological condition of both natural and hatchery juvenile chinook in the San Joaquin River and Delta, and investigate whether hatchery fish spread disease to natural populations. Sampling would occur in April - July 2000 at various sites on the San Joaquin River and at Chipps Island trawls. The U.S. Fish and Wildlife Service is requesting \$37,860 to conduct this study.

Water Challenge 2010 Exhibit. CALFED funded the design phase of this project in 1998; the U.S. Army Corps of Engineers and San Francisco Bay Model Visitor Center are now requesting \$50,500 to construct and install this hands-on exhibit which allows users to apportion water from a huge tank into three smaller tanks (representing the needs of agriculture, cities and industry, and the environment).

DIRECTED ACTION RECOMMENDED FOR FUNDING (FROM FY 98 FUNDS)

Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail and Other Native Species. Recent studies suggest that inundation of the Yolo Bypass during wet years has substantial benefits to many native fish species. Building on the technical studies and stakeholder process currently being conducted as part of the Yolo Basin Foundation's funding from an earlier CALFED grant, this project would improve spawning conditions for Sacramento splittail, improve rearing conditions for juvenile salmonids, enhance Delta food web productivity, and reduce stranding of native fish. The Natural Heritage Institute would receive \$820,679 for Phase I: baseline monitoring, alternatives analysis, and design.

Nonnative Invasive Species (NIS) Advisory Council. CALFED's Ecosystem Restoration Program Plan and Strategic Plan identify NIS as a major stressor in all habitat areas of its geographic scope. In September 1998, CALFED provided \$1.25 million to the U.S. Fish and Wildlife Service to develop a NIS work team, draft NIS Strategic and Implementation Plans, and fund projects to address NIS issues of concern. U.S. Fish and Wildlife Service would receive \$50,000 for the establishment of a NIS Advisory Council, which would monitor and coordinate the efforts of the NIS program and address those issues which require the commitment and dedication of agencies with existing authority and responsibility to address NIS issues.

Reducing the Risk of Importation and Distribution of Nonnative Invasive Species (NIS) Through Outreach and Education. Most NIS invasions occur because of human activities; a significant portion are intentional introductions from horticultural or agricultural operations, or for purposes of fisheries enhancement. The goal of this proposal is to prevent future introductions by educating industry members and representatives involved in the importation, sales, and distribution of live plants and animals (e.g. aquarium and pet dealers, seafood importers, bait dealers, landscape contractors) of the adverse environmental effects these plants and animals have on the environment. U.C. Davis would receive \$105,466 to: facilitate

communication among industry, agencies, and academia at a series of workshops; develop a brochure highlighting species of concern, their impacts, the pathways by which they get dispersed, and the best methods for preventing dispersal; produce a video highlighting the effects of NIS; develop a series of public service announcements informing the public about NIS issues; and develop a NIS website.

Zebra Mussel Detection and Outreach Program. The zebra mussel has caused millions of dollars of damage to water intake and delivery systems in the eastern U.S.; several live and dead mussels have been discovered in and on boats entering California. This proposal would provide information to educate the public about zebra mussels and the means by which they spread, and also set up and operate an early detection system in the Central Valley, Bay-Delta, and water storage and delivery systems. Department of Water Resources would receive \$100,000 for this three-year project.

Purple Loosestrife Prevention, Detection, and Control in the Sacramento and San Joaquin Delta and Associated Hydrologic Units. Department of Food and Agriculture would receive \$201,306 under this Directed Action to conduct detection and eradication of the small but spreading purple loosestrife infestations in the Delta and in nearby hydrological units.

Introduced Spartina Eradication Project. This project proposes to significantly reduce or eliminate the estimated 1,000 acres of introduced Spartina in the San Francisco Bay estuary. The objectives are to prevent further spread of Spartina to the North Bay and Delta and to prevent its introduction to new restoration projects. California Coastal Conservancy would receive \$250,000 for the first year of this project, the demonstration phase.

Practical Guidebook to Prevent and Control for Nonnative Invasive Plants in Shallow Water Habitats of the Bay-Delta System. This guidebook would provide practical information to for local control of the highest priority species of nonnative invasive plants in shallow water habitats of the Bay-Delta. It would focus on species that most threaten the beneficial uses of the waterways and for which there exists adequate information to assure successful prevention and control. San Francisco Estuary Institute would receive \$76,750 to produce the guidebook, which would also be posted online.

Effects of Introduced Clams on the Food Supply of Bay-Delta Fisheries. This project will conduct research on how the introduced Asian clam has altered the feeding environments of longfin smelt, delta smelt, and striped bass, how it has affected the production rate of native and introduced food for young fish in the Bay-Delta, and whether this production could be increased. San Francisco State University would receive \$100,490 to analyze existing data and utilize simulation models to provide a comprehensive and detailed description of the current status of the food web and likely impediments to rehabilitation.